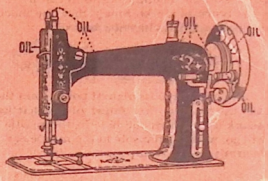
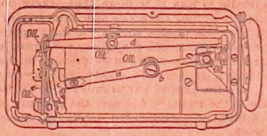
Form 939-8-20-3000

BOOK OF

Instructions

PRINTED IN U. S. A.





OILING THE MACHINE.

Oiling the machine is an important rule to be observed; for care in oiling the bearings insures durability, ease of motion, and prevents wear.

To oil the parts inside of the head, raise the needle bar to its highest point, put one drop of oil on each side of the needle bar, and one drop in each of the holes indicated in the above cuts.

To oil the works of under part of the head, throw off the belt and turn back the head. Oil holes will be found for all bearings which cannot be reached without them. Each place requiring oil is indicated by the word "oil" on the cuts. Be sure that every part is clean before you commence to sew. If the machine runs hard at any time, it is certain that some place has not been oiled. Run the machine several revolutions swiftly to distribute the oil on the bearings, then wipe off the excess of oil. If it becomes gummy by long standing, use a little kerosene or benzine, which will soon remove the gum; run the machine rapidly, then wipe off clean; after which apply a high grade oil.

Poor oil is dearer than good oil, because it ruins the parts of the machine and does not last as long. It eats into the bearings, making them rough and hard to operate; clogs and fills up the oil holes, so that, unless the operator care-

fully picks out the holes, the oil cannot penetrate to the bearings and soon the machine begins to run hard, and before long the bearings are so rough that the machine becomes worthless. Always buy the best oil.

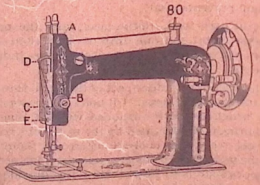
SETTING THE NEEDLE.

Raise the needle bar to its highest point; hold the needle between the thumb and first finger of the left hand and pass the shank up through the hole in the needle yoke as far as it will go, with the flat side to the needle bar. Secure the needle firmly by the clamp screw.

BREAKING OF NEEDLES.

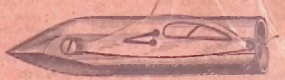
If the needle breaks it is more than likely your own fault, caused by pulling the goods to or from you, or in such a manner that the needle strikes the throat plate and is bound to break. The needle may, however, break in trying to sew extreme heavy seams when the pressure on the presser foot is not heavy enough. To create more pressure upon the goods, turn the presser bar thumb nut on the top of the presser bar to the right; to decrease the pressure turn it to the left. A blunt or hooked point needle will cause trouble and bad work.

TO THREAD THE MACHINE (Upper Thread).



Put spool upon Spindle [80], then pass the thread through thread guide [A], thence down between and around the tension discs at [B] and under thread controller(C), then up through take-up [D], then down through eyelet [E] and down through the needle, leaving about four inches of thread free.

TO THREAD THE SHUTTLE.

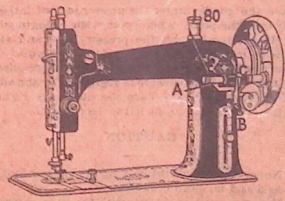


Take the shuttle in the left hand, with the point toward you; draw off about two inches of thread from the bobbin, thread running from the upper side; then put the bobbin in shuttle as far as it will go; then draw the thread into the open slot of shuttle; at same time putting a little pressure with the finger on the end of bobbin so that it cannot turn; by drawing the thread toward you it will be forced under the point of shuttle spring, then draw it back until it passes over the point; and shuttle is ready for sewing.

The tension is regulated by turning the screw in point of shuttle to the right or left; to the right, to give more tension; to the left to give less tension.

It will not generally be necessary to change the tension of shuttle for ordinary kinds of sewing.

TO WIND THE BOBBIN.



Unlock the balance wheel with thumb and forefinger of the right hand by drawing the key 12 out and turning it part round (this will prevent the machine from wearing, and save the trouble and annoyance of unthreading it, and removing the work while the bobbin is being filled). Then swing the bobbin winder until it is in position and presses firmly against the belt. Place the spool of thread to be wound from on spindle 80, and put the bobbin in bobbin winder. Pass the thread from the spool, down between the bobbin winder frame and wire guide at A, then through slot B at bottom of thread guide, then into V shaped slot of thread guide at C. To secure the end of the thread preparatory to winding, place it between the head of the bobbin and its socket at the right hand. Proceed as in sewing. When the bobbin has been filled, swing the winder from belt and turn back the key 12 until it enters the hole and locks the balance wheel.

TO PLACE SHUTTLE IN THE MACHINE.

Withdraw the front race slide and place the shuttle in the carrier, point first, towards the operator; then close the slide. It is sometimes more convenient to withdraw the back race cover and put the shuttle in its place when the carrier is at the back part of the race. This is especially the case when some of the attachments are in use.

TO DRAW UP THE LOWER THREAD.

Hold the upper thread slack with the left hand; turn the hand wheel towards you with the right hand, slowly, until the needle has passed down and up again to its highest point; then draw up the shuttle thread with the upper thread. Close the race cover (or covers, if both have been withdrawn), and draw the ends of thread back under the presser foot.

COMMENCING TO SEW.

The machine being fully threaded above and below, the lower thread drawn up, as heretofore explained, the presser bar raised and the needle bar at its highest point, you are ready to sew.

Place the goods under the presser bar, with the needle directly over the point where you wish to begin stitching. Lower the presser bar by the presser lifter, and start the machine by turning the hand wheel toward you. In sewing heavy or hard fabrics greater pressure is required than for light goods. The pressure is regulated by the adjusting nut on top of presser bar. Turn the nut to the right to increase the pressure, or to the left to decrease it.

CAUTION.

1. Never run the machine with the presser foot resting on the feed and no cloth between.

2. Never run the machine with the race covers open, except it is done with the hand, and very slowly.

3. Practice upon strips of cloth, and do not attempt practical sewing until you can guide the material and produce a regular motion of the machine.

4. Do not try to help the machine by pulling the fabric, lest you bend the needle; the machine feeds without any assistance.

5. Never run the machine backwards, or with both shuttle and needle threaded except while you are sewing.

6. Do not allow lint or dust to accumulate in the shuttle or under the shuttle tension spring, as any foreign substance inside of the shuttle (particularly in the inner end) will prevent the proper action of the bobbin; and under the tension spring will render the shuttle tension inoperative.

TO REMOVE THE WORK FROM THE MACHI

Stop the machine with the needle at its highest point; raise the presser foot and draw the top thread through the needle about two inches and cut both upper and lower thread, then with the right hand draw the work out directly back of needle.

TO TAKE OFF THE PRESSER FOOT.

Raise the needle bar to its highest point, unscrew the nut just above the presser foot by turning to the left, until the foot is loosened, when it can be drawn off.

TO GET REQUIRED LENGTH OF STITCH.

Unfasten the thumb screw on the front of the upright arm by turning it to the left, then slide it upward for a longer, and downward for a shorter stitch. Tighten the thumb-screw firmly so it will not jar loose while operating the machine.

DIFFICULTIES WHICH LEARNERS MOST FREQUENTLY ENCOUNTER.

BREAKING THE UPPER THREAD.

This may be caused by improper threading of the machine; the upper tension being too tight; the needle being too small for the thread; the needle being set the wrong side out, or set crooked; the needle being set too high, or by a sharp edge of the shuttle, or the needle being too large for the hole in throat plate.

BREAKING THE LOWER THREAD.

This may be caused by the shuttle being wrongly threaded; the tension being too tight; the bobbin being wound too full, so it will not revolve freely; a rough or sharp place on the edge of the shuttle at the heel; or by failing to keep the shuttle race clean.

CAUSE OF A MACHINE MISSING STITCHES.

Should there at any time be skipped or long stitches at intervals, it is owing to the needle being set too low (or too high in very heavy sewing), or its having become bent away from the shuttle, or its being too small for the thread in use, and sometimes to the point of the shuttle becoming accidently blunted. When using very fine needles, and also when stitching heavy work, be sure that the points of the needles are perfect, and on a line with the center of the direction of the needle, and not blunted or turned over. An imperfect needle may cause the best machine to miss stitches.

THE TENSIONS.

The object to be attained is to have the stitch alike on both sides of the fabric. This is accomplished by the ten-

sions, or strain upon both threads. The tension upon both threads should be as nearly alike as possible, and tight enough only to make a smooth, firm seam. If the threads are of the proper size for the material used, and both tensions right, the threads will be drawn and locked together in the center of the goods, as shown in Fig. A. If the upper tension is too loose (or the lower one too tight) the lower thread will lie straight along the under side of the goods, as shown in Fig. B. On the contrary, if the upper tension is too tight (or the shuttle tension too loose), the upper thread will lie straight on the upper side of the goods as shown in Fig. C.

A B C

As the shuttle tension has been set right for general work when the machine leaves our hands, as before explained, any needed regulation of the stitch in this respect should ordinarily be made by changing the upper tension. If, however, when the upper tension is regulated so the lock is in the center of the goods, both threads appear to be loose, and the stitches and seam not smooth and firm, the shuttle tension is too loose, and should be tightened by turning the tension screw shown on shuttle to the right; then tighten the upper tension correspondingly.

If the under thread can not be properly drawn up without having the upper tension so tight that the thread breaks, or if when the tensions are evenly balanced, the goods are "drawn" or "puckered" (this will occur only in sewing very light and "shazy" fabrics), the shuttle tension is too tight and should be loosened by turning the shuttle tension screw to the left; then loosen the upper tension to correspond.

The above particular explanation is given that every operator may fully understand the principles of the tensions.

TO TIGHTEN THE BELT.

The leather belt, which gives motion to the machine, should always be tight enough not to slip, and no tighter—not so tight as to prevent the easy motion of the machine. If the belt is too long, uncouple it and cut off squarely from one end, say half an inch.

NEEDLES, TWIST, LINEN AND COTTON THREAD.

Do not use poor thread or needles. Any good thread will work well, but you must not expect to make a smooth, even stitch with poor, rough thread, nor can you expect a machine to work well with a cheap grade of needles, made in imitation of ours. As our interest is to maintain the reputation of the machine, it is evident that we will always supply the best. Persons living at a distance from an agency can send by mail, enclosing us the money, and we will fill orders promptly by mail or express.

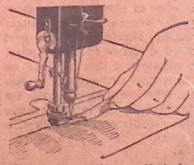
TO SELECT NEEDLES AND THREAD.

Size of Needle.	CLASS OF WORK TO SEW.	Size of Cotton, Linen or Silk.
O	Very Fine Thin Muslins, Cambrics, Linens, etc.	120 to 300 Cotton.
B	Very Fine Calicoes, Linens, Linen Shirtings, Fine Silk Goods, etc.	90 to 120 Cotton, E 000, 00 Silk Twist.
½	Shirtings, Sheetings, Bleached Calicoes, Muslins, Silks and General Domestic Goods, and all classes of General Work.	60 to 90 Cotton, 0 and 00 Silk Twist.
1	All kinds of Heavy Calicoes, Light Woolen Goods, Heavy Silks, Seaming, Stitching, etc.	40 to 60 Cotton, A and 0 Silk Twist.
2	Tickings, Woolen Goods, Trousers, Boy's Clothing, Corsets, Cloaks, Mantles, etc.	24 to 40 Cotton. A and 0 Silk Twist.
3	Heavy Woolens and Tickings, Bags, Heavy Coats, Trousers, and Heavy Clothing generally	10 to 24 Cotton, A and B Twist, and 60 to 80 Linen.
4	Bags, Coarse Cloths, Heavy Goods of any texture.	40 to 60 Linen, B C & D Silk Twist, or very Coarse Cotton.

For Needles O, B, 1-2 and 1, use throat plate with Small needle hole; for 2, 3, and 4 use throat plate with Large hole.

THE FOOT HEMMER AND FELLER.

Raise the needle to its highest point and raise the presser-foot to its first lift by turning the lifter to the right.



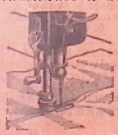
Loosen the nut, take off the presser-foot and replace with the hemmer. Set same to its right place and fasten nut by turning to the left. Raise the presser-bar by turning the presser-lifter to the right, and pass the edge of the cloth into the hemmer in the manner shown in the illustration, drawing it through the hemmer as far as the needle-hole, in order that the feed may at once catch the cloth. Then let the hemmer down upon the feed surface, and operate the machine. Hold the goods with the right hand, as shown in illustration. Should the goods begin to run out of the hemmer, carry them to the

RIGHT; should too much run into the hemmer, carry the goods to the LEFT. About one-fourth of an inch in width is as much of the goods as is usually required to form a perfect hem. If the stitch takes the hem too far from the edge, turn the hemmer a little to the right. If, on the contrary, the stitch does not catch the edge of the hem, turn the hemmer a little to the left.

WIDE HEMMING.—Fold (by hand) the width of hem required, turning one fold only, adding about one-eighth of an inch, which will be turned under by the hemmer. Introduce the edge of the cloth the same as for a narrow hem, and proceed in the same way, hold the goods in the right hand. Should the cloth begin to run out, carry it to the RIGHT; should too much run into the hemmer carry it to the LEFT.

AS USED FOR HEMMING AND SEWING ON LACE.—Put the edge of the fabric into the hemmer. When the hem is well started, raise hemmer-foot, also raise the needle. Pass the lace through the slot in side of hemmer, carrying it back under the hemmer on top of the hem. Proceed as in hemming, keeping the lace well in the side.

FELLING.—Attach the hemmer to the machine, as instructed above. Sew the two edges of the cloth together,



the under one projecting one-fourth of an inch beyond the upper; then open out the work and crease the seam down the wide edge over the narrow edge, and draw the wide folded edge into the hemmer, the same as if it was a hem, and drop the foot. Then guide the folded edge, and work the machine the same as in ordinary hemming. A wider fell requires a wider seam, which is turned same as wider hem.

THE QUILTER.

Insert the quilter through the small hole in the presser-bar, and fasten with the screw in back of presser-bar, moving it to the right or left to the required

width of the rows of stitching. Raise or lower the quilter according to the thickness of the goods. Having made the first row the desired distance from the edge, place the work so that this row will be under and in a line with the lower edge of the quilter, which will form a guide for each row of stitching; the last row made always passing under and in a line with the quilter while stitching the next.

We make a complete set of attachments especially adapted for ruffling, braiding, hemming, binding, fine tucking, and all kinds of plain and fancy work. They are highly finished, and put in a velvet lined case. Sold either with the machine or separate; full and complete instructions furnished with each set.